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ABSTRACT

This paper attempts to show that Zwicky's rule of Auxiliary Reduction is an incorrect analysis of the contraction of auxiliaries in English; and that the phonological processes involved are not as complicated as Zwicky makes them out to be. A simpler explanation is offered through analyzing auxiliary reduction as a three-step process. The three steps are: (1) unstressed auxiliaries containing lax vowel must undergo the Auxiliary Vowel Reduction (AVR) which changes the vowel to a schwa; (2) the Auxiliary Glide Deletion Rule (AGD) will do away with initial [h] and some instances of initial [w]; and (3) by the rule of Auxiliary Schwa Deletion (ASD), and initial schwa obtained as a result of AVR or AGD can be deleted provided it is preceded by a [-consonantal] segment. (Author/AM)

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More on Auxiliary Reduction in English

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Most English auxiliaries can be reduced (contracted) anytime exceptin the following environments:

1. When a constituent following the auxiliary form has been moved or deleted.

   (1) You'll need some, and {I will / *I'll} too.

   (2) I wonder where Gerard {is / *'s} today.

2. When a constituent following the auxiliary form has been inserted.

   (3) This is something which {will / *'ll}, I think, surprise you.

3. When no other constituent in an S has been assigned primary stress.

   (4) How {is / *'s} he?

4. When the auxiliary form has received emphatic stress.

   (5) You {WILL / *'LL} do it.

Following Chomsky and Halle (1968:22), I will consider auxiliares to be basically unstressed and to remain so, unless they appear in the environments cited above, in which case they are assiged primary stress by whatever rule will prove to be the most natural. Stressed auxiliaries cannot be reduced.

The reduction of unstressed auxiliaries has been dealt with by Zwicky (1970). He sets up two rules, Glide Deletion and Auxiliary Reduction, but so many conditions, restrictions and exceptions must be appended to the second rule that it becomes more of a list than a generalization. Zwicky's rule of Auxiliary Reduction is:

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$$[\quad]\quad \#\ \#\quad \begin{bmatrix} V \\ -\text{tense} \\ -\text{stress} \\ -\text{auxiliary} \end{bmatrix} \quad [\blacklozenge\text{cons}] \quad \#\ \#$$

1	2	3	4	5	⇒
1	#	ø	4	5	

Restrictions

(a) If 4 is not [z], then 1 is a vowel;
(b) if 4 is not a coronal obstruent ([z] or [d]), then 1 is a segment of a pronominal NP immediately dominated by S;
(c) if 4 is [m], then 1 is a segment of the pronoun I.

Zwicky says, "A more informal statement of the restrictions is that there are four classes of auxiliaries undergoing reduction - (i) is and has, (ii) would and had, (iii) have, will, and are, and (iv) am - and that the reduction takes place only after vowels for classes (ii) through (iv), only after pronouns immediately dominated by S in classes (iii) and (iv), and only after the specific pronoun I for class (iv). The differentiation of the classes by the final segment of the auxiliary ([z], [d], [v l r], [m]) is adopted here with some misgivings, in the absence of any satisfying explanation for the rather peculiar distribution of the forms into the four classes (emphasis mine). Another basis for the distribution, namely that the class (i) forms contain the third singular present morpheme, the class (ii) forms the past morpheme, and the class (iii) and (iv) forms neither, seems equally arbitrary" (emphasis mine) (1970:333).

Obviously, Zwicky's rule of Auxiliary Reduction fails to capture any significant generalizations about the contraction of auxiliaries in English. The purpose of this paper is to show that Zwicky's analysis of these phenomena is incorrect and that the phonological processes involved are not as esoteric as he makes them out to be. I will propose that a much more natural explanation is available if auxiliary reduction is analyzed as a three-step process.

Firstly, an unstressed monosyllabic auxiliary undergoes a reduction of its vowel to schwa if this vowel is lax. This automatically excludes the auxiliaries having, may, might, ought and be. The rule for Auxiliary Vowel Reduction (AVR) can be stated as:

$$\begin{bmatrix} V \\ -\text{tense} \\ -\text{stress} \end{bmatrix} \rightarrow \partial \;/\; \# \; (C) ___ C_1 \; \# \;/\; \Phi_{AUX}$$

Concerning the exact quality of this reduced vowel, I will not venture beyond Chomsky and Halle's remarks: "Phonetically the vowel which we represent... as [ə] may often (or, in some dialects, always) be raised to the high central vowel [ɨ]. We will not consider at this point the question of how, in detail, this vowel is phonetically realized in various contexts and dialects. For expository purposes, we may accept the fiction that the vowel we are representing as [ə] is distinct from all other vowels" (1968:59).

Subject to the rule of AVR are the following auxiliaries:

John	can	[kən]	go
	must	[məst]	
	should	[ʃəd]	
	would	[wəd]	
	will	[wəl]	
	could	[kəd]	
	shall	[ʃəl]	

I	was	[wəz]	going
Bill	has	[həz]	gone
	had	[həd]	
We	have	[həv]	gone
Jean and Pat	are	[ər]	going
	were	[wər]	
Sam,	am	[əm]	I going?
Mitch	is	[əz]	going

Next, there is a rule which optionally deletes the [h] in *have, has* and *had*, and the [w] in *would* and *will*. Zwicky calls this Glide Deletion and goes into the difficulties of formalizing the conditions of this phenomenon in English (1970:326-7).

Whereas [h]-deletion can occur whenever it precedes a weakly-stressed vowel, [w]-deletion is restricted exclusively to *would* and *will*, at least in my dialect. Zwicky claims that [h]-deletion is not conditioned by a following [-stress] vowel, but by one which is "relatively unstressed with respect to [its] immediate environment" (1970:326).

However, Zwicky states that he is unable to formalize such a condition, and since this has little, if any, bearing on the overall argumentation, the conditioning vowel can be considered to contain the feature [-stress] in some sense. The rule can be stated as:

$$\begin{bmatrix} \text{-vocalic} \\ \text{-consonantal} \\ \text{-high} \end{bmatrix} \longrightarrow \partial \;\Big/\; \underset{}{\overset{V}{_}}\,[\text{-stress}] \;\Big/\; \bullet\text{AUX}$$

For the purpose at hand, I will refer to this rule as Auxiliary Glide Deletion (AGD), and this appellation will be understood to include the very minor rule of [w]-deletion.

Bob	will / would	[əl] / [əd]	go
Beatrice	has / had	[əz] / [əd]	gone
When	have	[əv]	I gone?

Thirdly, any auxiliary which has become schwa-initial as a result of AVR (am, are, is) or AGD (will, would, has, had, have) can drop schwa if it is preceded by a [-consonantal] segment. The rule of Auxiliary Schwa Deletion (ASD) can be stated as:

$$\partial \longrightarrow \varnothing \;\Big/\; [\text{-cons}]\ +\ _\ C\ +\ \Big/\ \bullet\text{AUX}$$

I'm / You're / He's	[m] / [r] / [z]	going
He's / We've / They'd	[z] / [v] / [d]	gone
You'll / They'd	[l] / [d]	go

In addition, [əz] (has, is) will drop its schwa not only when preceded by a vowel, but also when preceded by any consonant except one that is either non-strident or non-coronal, i.e. [s z š ž č ǰ]. This constraint is identical to the one which operates in plurals and possessives. Compare:

(6) a. The judge is [ǰ ʌ ǰ ə z] going on vacation.
b. The judges [ǰ ʌ ǰ ə z] going on vacation...
c. The judge's [ǰ ʌ ǰ ə z] going on vacation...

To accomodate these facts, we can either revise the rule of ASD so that schwa will be deleted not only after a vowel, but also between a non-strident or non-coronal segment and /z/; or we can revise ASD so that schwa will drop after a vowel, and between any consonant and /z/ after which another rule will reinsert schwa between /s z š ž č ǰ/ and /z/ (Zwicky's solution apparently); or we can leave ASD as is, and formulate another rule which will delete schwa between non-strident or non-coronal segments and /z/.

The second option can, I feel, be rejected outright. The deletion and reinsertion of the same segment in an identical environment seriously lacks linguistic reality. The first and third options would appear to be equally plausible, depending upon whether we consider the underlying form of the plural and possessive marker to be /-z/ or /-əz/.

If it is /-z/, then the first option is mandatory. We must include all the information on the reduction of /əz/ (has, is) in the rule of ASD because another rule will insert schwa in plurals and possessives when the marker /-z/ is preceded by /s z š ž č ǰ/.

If, on the other hand, the underlying form is /-əz/ for that marker, schwa deletion in /əz/ (has, is) cannot be considered to be restricted to auxiliaries because the same deletion process applies to the plural and possessive marker /-əz/. Thus, the rule of ASD applies only after vowels, and another rule deletes schwa when it is not preceded by /s z š ž č ǰ/.

One problem with the latter alternative is that the schwa in the plural and possessive marker /-əz/ is obligatorily deleted when preceded by a non-coronal or non-strident segment whereas deletion is optional for auxiliaries. Compare:

(7) a. John's $\left\{\begin{matrix}[\bullet əz] \\ [\ z\ ]\end{matrix}\right\}$ book.

b. John $\left\{\begin{matrix}\text{has} \\ \text{is}\end{matrix}\right\}$ $\left\{\begin{matrix}[əz] \\ [\ z\ ]\end{matrix}\right\}$ gone.

However, a possible cause for this difference could reside in the nature of the boundary - plurals and possessives are preceded by a morpheme boundary, auxiliaries by a word boundary presumably.

The rule of ASD is in fact optional in many contexts, but it is not clear to me precisely what the conditioning factors are. Though Zwicky (1970:332) claims that there is no reduction when the auxiliary is preceded by coordinate subjects, a relative clause, an

embedded complement and various kinds of reduced relatives, I have yet to encounter a native speaker who rejects the following contractions:

(8) John and Betty'd like that.
(9) Anyone who heard you'd be impressed.
(10) To see you's been nice.
(11) The guy next to you'll speak first.

On the other hand, all of these sentences are perfectly natural without schwa deletion as in:

(12) John and Betty [əd] like that.

In sum, I have tried to show that Zwicky's analysis of auxiliary reduction in English, though rich in surface phonetic details, fails mainly because he tries to encompass too many independent phenomena into one rule, viz. Auxiliary Reduction. This rule, as was seen, is little more than a list which must state a large set of phonological, morphological and syntactic information without capturing any kind of generalization.

A much more natural analysis is obtained if we consider contraction to be a three-step operation. Firstly, any unstressed auxiliary containing a lax vowel must obligatorily undergo the rule of Auxiliary Vowel Reduction (AVR) which changes this lax vowel to schwa, e.g.

(13) Betty would [wəd] go.

Secondly, Auxiliary Glide Deletion (AGD) will optionally do away with any initial [h] and some instances of initial [w], e.g.

(14) Betty would [əd] go.

Finally, by the rule of Auxiliary Schwa Deletion (ASD), any initial schwa obtained as a result of AVR or AGD can be deleted provided it is preceded by a [-consonantal] segment, e.g.

(15) Betty would [d] go.

In addition, schwa can be deleted if it is followed by [z] and preceded by any consonant other than [s z š ž č ǰ]. Since this constraint is identical to that found in the formation of plurals and possessives, this can be analyzed as a rule separate from ASD, provided the plural and possessive marker is /-əz/. If, however, this marker has the underlying form /-z/, ASD must contain all the

pertinent deletion information, and a rule of epenthesis must be formulated for plurals and possessives.

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